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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,399	10/08/2003	Yuanning Chen	TI-35212	7440
23494	7590	09/25/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			FARAHANI, DANA	
			ART UNIT	PAPER NUMBER
			2891	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,399

Applicant(s)

CHEN ET AL.

Examiner

Dana Farahani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,8-15,18,19,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8-15,18,19,24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/8/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 8, 12, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Jin et al., hereinafter Jin (US Patent 6,720,213).

Jin discloses in figures 6A-6E, forming and patterning a gate poly-conductor 608 (see column 9, line 67) on a semiconductor substrate, the gate including opposing side surfaces; depositing a silicon oxynitride material 610, over the gate as well as over the semiconductor substrate and on a side of the gate, the opposing side surfaces of the gate being substantially free of the oxide material; and forming spacers 618 by etching the nitride layer 614-2 on the opposing side surfaces of the gate subsequent to depositing the oxide material, the spacers contacting the opposing side surfaces of the gate substantially along the opposing side surfaces.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin in view of Nishimoto et al., hereinafter Nishimoto (US Patent 5,814,543).

Jin discloses the claimed invention, as discussed above, but does not disclose implanting an LDD implant after forming the gate, but before depositing the oxide layer.

Nishimoto discloses in figure 20 a memory circuitry, which implements LDD regions 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form LDD regions in the Jin reference in order to make it usable in a circuitry, which require LDD regions. Although Jin in view of Nishimoto does not disclose the LDD regions are formed after forming the gate but before depositing the oxide layer, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the order of forming these regions, according to the manufacturing environment and convenience of one of ordinary skill in the art. See *Ex Parte Rubin* 126 USPQ 440 (BAPI 1959) for the proposition that reversing the order of a process sequence cannot be considered an act of invention.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jin.

Jin discloses the claimed invention, as discussed above, but does not expressly disclose spacers mitigating diffusion of dopants from the opposing side surfaces of the gate. However, it

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would have been obvious to one of ordinary skill in the art at the time of the invention to form the source and drain in that way, since forming them using the spacers of a FET is customary practice in the art.

6. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin, and Jin in view of Nishimoto.

Jin, and Jin in view of Nishimoto discloses the claimed invention, as discussed above, except for expressly stating the MOSFET is PMOS. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the MOSFET as a PMOS, in accordance to one of ordinary skill in the art to make a PMOS for various uses.

7. Claims 4, 6, 14, and 15 are rejected under 35 U.S.C. 103(a) as being anticipated by Jin, as applied to claims 1 and 12 above, and further in view of Jeng (US Patent 6,303,490).

Jin discloses the claimed invention, as discussed above, except for an anisotropic Physical Vapor Deposition (PVD) which comprises one of collimated sputtering, long throw sputtering or ionized metal plasma method is used in depositing the oxide material.

Jeng discloses anisotropic ionized metal plasma sputtering method is used for deposition which gives a good surface coverage (see column 4, lines 24-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use this method to deposit the oxide layer of the Jin reference, since the advantages of using the method, such as the advantage mentioned above is well known in the art.

Response to Arguments

8. Applicant's arguments with respect to the previously rejected have been considered but are moot in view of the new ground(s) of rejection.

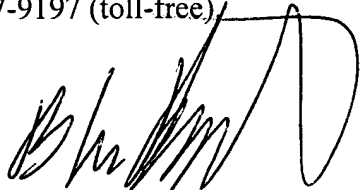
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (571)272-1706. The examiner can normally be reached on M-F 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571)272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Farahani



B. WILLIAM BAUMEISTER
SUPERVISORY PATENT EXAMINER